



Scandinavian Seas wind resource mapping using synthetic aperture radar

Hasager, Charlotte Bay; Christiansen, Merete Bruun; Nielsen, P.M.

Published in:
Geophysical Research Abstracts (CD-ROM)

Publication date:
2008

Document Version
Publisher's PDF, also known as Version of record

[Link back to DTU Orbit](#)

Citation (APA):
Hasager, C. B., Christiansen, M. B., & Nielsen, P. M. (2008). Scandinavian Seas wind resource mapping using synthetic aperture radar. In *Geophysical Research Abstracts (CD-ROM)* (Vol. 10, pp. EGU2008-A-01841). EGU.

General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.



Scandinavian Seas wind resource mapping using synthetic aperture radar

C.B. Hasager, M.B. Christiansen, M. Nielsen

Risø DTU, Wind Energy Department, Roskilde, Denmark (charlotte.hasager@risoe.dk)

The Scandinavian Seas have high potential for wind farming and a major part of existing offshore wind farms is located here. Each wind farm project has its own meteorological measurement campaign for the local area, yet for a broader view of the offshore wind resources additional information from satellite ocean wind observations and modelling is adequate. The present work presents estimates on offshore wind resources based on several hundred Envisat Advanced Synthetic Aperture Radar (ASAR) satellite images, kindly granted by the European Space Agency through the EO-1367 project. The images are downloaded, calibrated and calculated to wind maps in near-real-time using software developed by the Johns Hopkins University Applied Physics Laboratory. This operational tool obtains model wind directions from the Navy Operational Global Atmospheric System (NOGAPS) and retrieves wind speeds from the normalized radar cross-section using the CMOD5 model. The series of wind maps are input to S-WAsP, software for wind resource analysis based on satellite images. In S-WAsP the wind statistics in form of wind maps for mean wind speed, Weibull A and k and uncertainties are calculated. The results may also be extracted as wind statistics in table and as wind roses. Comparison to available data will be presented.